

**THE ASSOCIATION OF ACID PEPTIC DISEASE
WITH HELICOBACTER PYLORI COLONIZATION
OF THE UPPER GIT AND THE EFFECTIVENESS
OF TRIPLE THERAPY USE ON THESE
CONDITIONS**

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Introduction

Gastritis, duodenitis and peptic ulceration are common chronic conditions. Their aetiology and pathogenesis are not completely understood. Thus much excitement was generated in 1983 when Warren and Marshall found curved or spiral campylobacter-like bacteria in endoscopic antral mucosa from patients with gastritis and peptic ulceration. It was suggested that these bacteria might cause these diseases; an association which has now been supported by various studies (Rauws and Tytgat, 1989).

In 1989, information about H-pylori infection started being gathered in Malta. This project was thus aimed towards gathering data on the incidence, clinical aspects and treatment of this association.

Methodology

Study 1

Prevalence of Helicobacter pylori in the Maltese Islands

In the 1989 - 1990 period, endoscopy procedures were conducted by Dr. A. Caruana Galizia et al at the Endoscopy Unit of St. Luke's Hospital. The surgical procedures involved Fibreoptic-oesophago-gastro-duodenoscopy (FOGD) and results were collected and kept at the Endoscopy Unit. A survey was conducted in Jan - Feb 1990 using FOGD, on 90 consecutive patients to check the incidence of H.pylori in such patients using the CLO Test^C. The association of Helicobacter pylori colonization with inflammation and ulceration was also studied.

Study II

Clinical experience with this association

From over 300 endoscopies performed over the period March '90 - June '91, 50 patients were eligible to be included in this study, with the rest being eliminated by the Inclusion/Exclusion criteria.

The effectiveness of Triple Therapy use on H.pylori colonization and the latter's subsequent influence on acid peptic disease (i.e. peptic ulceration, gastritis, and duodenitis) were studied. The prevalence of predisposing factors (alcohol, smoking and NSAIDs) in these patients were also

assessed to find whether these factors had any influence on association or treatment.

Study III

Patient Interview

40 patients from a list of 50 patients for the period March '90 - June '91, whose diagnosis was confirmed by CLO Test and endoscopy, were interviewed at M2 Ward St. Luke's Hospital. Information on i) symptoms before Triple Therapy, ii) symptoms after Triple Therapy, iii) Drug-related problems, iv) Relationships with pharmacists/doctors and v) Effect of disease/treatment on quality of life was obtained.

Results

Study 1

In this study, conducted in January - February '90, 90 patients were endoscoped and urease tested for incidence of *H.pylori* colonization - 54 males (60%) and 36 females (40%). In these patients ages ranged from 19 to 76 years. As regards the CLO Test, 29 males (54%) and 15 females (42%) were urease positive with a total prevalence of 49% i.e. 44 out of 90 patients.

Endoscopic findings in these patients found that 40 patients had evidence of actual gastric or duodenal ulceration or endoscopic evidence of gastritis or duodenitis. In these 40 patients, 26 patients (65%) were colonized by this micro-organism. The remaining 50 patients were divided into those with normal (n=21) and abnormal histology (n=29). In the latter, 46% were urease positive while in the 21 patients with normal histology, only 24% tested positive to CLO Test.

Finally, urease positive test results obtained for *H. pylori* were most frequent in the following groups of patients:

Description	Patients	%
Patients with actual or previous duodenal ulcer and with definite chronic gastritis	9 out of 10	90
Patients with actual or previous duodenal ulcer	12 out of 15	80
Patients with definite histological changes of chronic atrophic gastritis	29 out of 43	67
Patients with actual or previous gastric ulcer and with definite chronic gastritis	5 out of 10	50

Study II

The patients included in this study were all CLO+ve and had endoscopical evidence of inflammation/ulceration (Inclusion Criteria). 40% (n=20) of the patients had gastritis or duodenitis while 60% (n=30) have gastric or duodenal ulceration.

27 patients turned up for their re-endoscopy and confirmed that they had completed their Triple Therapy course (Exclusion Criteria). Triple Therapy consists of De-Nol (tri-potassium di-citrate bismulhate) 120mg 4 times daily for 4 weeks, Amoxycillin 250mg 3 times daily 1 - 14 days and Metronidazole 200mg 3 times daily 15 - 28 days. The CLO Test was performed in 24 patients, the remaining patients (n=3) were not tested for *H.pylori* colonization because at the time of investigation the test strips were not available.

CLO Test	No	%	Male	Female
Urease -ve	16	67	11	5
Urease +ve	8	33	3	5
TOTAL	24	100	14	10

Endoscopic Evidence - The patients were subdivided into 3 groups:

- Group I: Patients with normal endoscopic findings
Group II: Patients having endoscopic evidence of gastritis or duodenitis only
Group III: Patients with gastric or duodenal ulceration

Group	Pre-Triple Therapy	%	Post-Triple Therapy	%	Urease +ve
I	0	0	12	44	2
II	8	30	11	41	3*
III	19	70	4	15	3*

* N.B. 2 CLO Test results not available for Group II patients and 1 CLO Test result not available for Group III patients

33% (n=9) of patients stated that they drank alcohol and smoked while taking their treatment while another 6 patients either smoked (n=3) or drank alcohol (n=3) bringing the total to 55% (n=15). The influence of these predisposing factors on H.pylori colonization and Triple Therapy were tabulated:

	Pre-Triple Therapy	CLO +ve	Post-Triple Therapy	CLO +ve
Group I	0	0	4	0
Group II	6	6	8	2*
Group III	9	9	3	1*

* N.B. 2 CLO Test results were not available for Group II patients and 1 CLO Test result was not available for Group III patients

Study III

Interviews showed that:

- i) All patients prior to Triple Therapy have experienced epigastric pain with almost half (47.5%) of patients having heartburn as secondary symptom. 67% (n=27) of patients felt pain on a daily basis with the duration running for several hours. All patients had taken either Antacids or H₂-Receptor Antagonists to Triple Therapy, in those patients (n=27) who had taken both, 63% (n=17) found H₂RA better than antacids symptom-wise.
- ii) After Triple Therapy use, symptoms recurred again in 42.5% (n=17) of patients. In these patients, 65% (n=13) remained symptomless for more than a year. Whenever these patients had a recurrence, the severity, duration and frequency of the symptoms were found to be less than before.
- iii) The highest percentage for drug-related problems was of 85% (n=34) having a common side-effect of De-Nol, stools turning black. There was no evidence of serious side-effects such as encephalopathy.
- iv) 37.5% (n=15) wanted pharmacists to play an advisory role, 90% of the patients attended out-patient clinic regularly and 92.5% had faith in their medicines.

- v) Disease/Treatment had the greatest impact on their emotions (100%) with the second largest influence being on food in 73% of patients.

Discussion

Results indicate that the incidence of *H.pylori* in Malta is not rare and it affects more males than females. There is a definite association between *H.pylori* colonization of gastro-duodenal mucosa and acid-peptic disease. The efficacy of Triple Therapy in *H.pylori* eradication was somewhat successful and definitely higher than that obtained in studies with antimicrobials or H_2 -receptor antagonists (Hirschl et al, 1988). The micro-organism's removal had a consequently beneficial effect on the gastro-duodenal mucosa and underlying tissues. In addition, the symptomatic relief achieved by Triple Therapy ensure its future therapeutic role as an alternative to more traditional treatment. Also predisposing factors such as smoking and alcohol were found to have no influence on Triple Therapy eradication of *H.pylori*. The most serious side-effect of De-Nol, encephalopathy, was absent agreeing with the Amsterdam study (Rauws and Tytgat, 1989) that no serious side-effects arise with the Bismuth salt if it is limited for short treatment periods. There were no problems of compliance in these patients and after Triple Therapy there was a marked improvement in their quality of life.

Conclusion

Study I shows the need to know the incidence of *H.pylori* colonization in the general population, now that there is overwhelming evidence of its pathogenic role in acid peptic disease. The use of serum antibody assays usually IgG, specific to *H.pylori* would make mass screening possible (Rathbone and Heatley 1989). This technique, however is not in current use at St. Luke's Hospital. Study II shows the efficacy of Triple Therapy use in patients with these conditions and the need for this drug treatment to succeed other drug therapy currently in use. However, its success rate on *H.pylori* eradication proves the need for further improvement and research for better drugs. Study III shows that pharmacists and doctors should play a more active role in informing their patients how to understand and manage better their disease.

References*

Hirschl A.M. et al. The efficacy of antimicrobial treatment in *Campylobacter pylori*-associated gastritis and duodenal ulcer. *Scand. of Gastroenterol* 1988; 23 (suppl. 142): 76 - 81

Rathbone B.I. and Heatley R.V. (Eds.). *Campylobacter pylori* and gastroduodenal disease. Blackwell Scientific Publications, Oxford, 1989. p. 190 - 196.

Rauws E.A.J. and Tytgart G.N.J. *Campylobacter Pylori*. WC Den Ouden. B.V. Amsterdam 1989; p. 7 - 104.

* the name of the micro-organism has since 1990 changed from *Campylobacter pylori* to *Helicobacter pylori*